NICARAGUA DECENTRALIZED HEALTH SERVICES PROJECT

MIDTERM EVALUATION

DECEMBER 1995

USAID PROJECT NO. 524-0327

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USAID/Nicaragua

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LIST OF ACRONYMS AND ABBREVIATIONS

ARI	Acute Respiratory Infections
ASC	Accelerated Start Component
ASFC	Alternative Sources of Finance Component
CHW	Community Health Workers
CIPS	Centro De Insumos Para La Salud
COP	Chief of Party
COFARMA	Corporacion Farmaceutica
DEC	Directorate for External Cooperation
DGI	Development Group, Inc.
DGNIM	Direccion General de Normalizacion de Insumos Medicos
DHS	Decentralized Health Services
EOPS	End-of-Project Status
EPI	Expanded Program of Immunization
FMS	Financial Management System
GDO	General Development Office
GON	Government of Nicaragua
IE&C	Information, Education and Communication
INCAE	Instituto Nacional Centroamericano De Empresas
INSS	Nicaragua Social Security System (Instituto Nacional de Seguros Sociales)
LOP	Life-of-Project
MH/CS	Maternal Health and Child Survival
MFD	Management, Finance, and Decentralization
MINSA	Ministry of Health (Ministerio de Salud)
MIS	Management Information System
MSH	Management Sciences For Health
MOF	Ministry of Finance
OOC	Out of Country (training)
ORU	Oral Rehydration Units
OVIs	Objective Verifiable Indicators
PACD	Project Assistance Completion Date
PASA	Participating Agency Service Agreement
PAHO	Pan American Health Organization
SILAIS	Sistemas Locales de Atencion Integral en Salud (Local Integrated Health Care Systems)
SIVIC	Sistema de Vigilancia de Insumos Medicos
TA	Technical Assistance
TBA	Traditional Birth Attendants
TOT	Training of Trainers
USAID	U.S. Agency for International Development
USPHS	U.S. Public Health Service

EXECUTIVE SUMMARY

The DHS project is a complex set of inter-related components. Overall project performance has been mixed with some components achieving all of their expected outcomes while others have had some delays or problems concerning quality of the products developed. In addition, project management has had some serious difficulties concerning acceptance of workplans. These difficulties have at times overshadowed real progress in the project.

Both MSH and USAID turned to the evaluation mechanism as a means to clarifying what progress could be independently assessed to date, identifying strengths and weaknesses and recommending actions to improve performance as needed. The reader is encouraged to look at the information for each component presented as well as the conclusions and recommendations in reviewing whether the project is achieving what it set out to do.

The challenge in any evaluation is to determine progress against agreed on expectations. Sometimes substantial progress might be in evidence but it is not the result that key stakeholders had in mind. Sometimes changes in project design during implementation are appropriate responses to the dynamics of the development environment. The key is that all parties in the process must be in agreement as to what success will look like. They do this by checking each other's assumptions on a regular basis as well as consulting written agreements. Reluctance to consult each other on these aspects can lead to lack of understanding on future direction as well as accomplishments. All parties in the process are encouraged to review the information presented in this report in light of this challenge.

A summary of the major points made in the evaluation is presented here.

Accelerated Start Component

This component conducts a series of studies to provide analytical underpinning for the DHS project. Almost all studies were completed according to plan and found acceptable. The studies which were satisfactorily completed on time are:

--Survey of Ongoing and Proposed Donor Activities

--Cost Containment and Cost Recovery Assessment Report

--Preliminary Analysis of the Financial Administration System for the Health Services of the Ministry of Health

--An Assessment of the Nicaraguan Ministry of Health's Compliance with the Finance-Related conditions of its USAID PL-480 Title III Agreement

--Assessment of Commodity Needs Study

--Tracking Systems for Commodities Study

--Financial Management Systems Report

Those that experienced some delays or redrafts were:

--Baseline Data and End of Project Status Indicators Report

--ASC Activities Final Report

One report, the Human Resources Assessment, was not completed. USAID determined that further revisions would not be productive.

The evaluation recommends that this last report be considered for completion so that capacity building needs of MINSA can be more realistically determined.

Maternal Child Health and Child Survival Component

The largest amount of disagreement on project emphasis appears in this component. While a large amount of progress has been made in achieving MH/CS results, controversy remains over component direction and the role of immunizations in the strategy.

Major accomplishments of this component include:

--Community surveys in targeted SILAISs to determine the nature and extent of health problems

--Development of a permanent registry for children to facilitate delivery of services in the Integrated Model.

--Survey of 57 oral rehydration units in the SILAISs to assess location as well as supplies and equipment available.

--Study of current ARI treatments led to changes in the clinics involved in the study. The results were disseminated at a MINSA conference.

--In the maternal health area surveys of care quality for pregnant women, analysis of maternal mortality data, workshop on family planning, reviews of nutrition status monitoring tools used to measure child survival with MINSA led to growth chart revisions and staff re-training in its use, nutrition study in Boaco to identify age where nutritional problems start, introduction of DepoProvera in Jinotega, training in family planning counseling in all the SILAISs, review of MINSA's model for integrating MH/CS services in the SILAISs, analysis of the health problems in Ciudad Sandino.

In addition, attention has focused on immunizations as an entry point to MH/CS care. The issue for the project is not whether this is a sound approach but rather how much DHS should do and what should be left to the PAHO agency with the lead on this component. Issues remain as to how much immunization should be going on and led by whom. These issues require resolution.

The Integrating Health Services model is at the heart of the MH/CS intervention. In evaluating progress, the evaluation team noted the successful development of an operations manual. They agreed with the MSH team that rapid expansion will call for a major re-training effort for SILAIS staff along with improvements in the supply and supervision systems.

Overall, the team noted a significant number of activities having been implemented by the MH/CS component. Workplans lack the degree of specificity needed to focus interventions in each SILAIS clearly on MH/CS priorities. Improvements in the measures being used to monitor might be indicated to reflect what changes are really occurring in each SILAIS. A more deliberate strategy could enhance project success. Restructuring the component to advance work in ARI, diarrheal diseases and maternal health seems indicated.

Training and Information, Education and Communication Sub-Component

Significant progress has been made in training key groups involved in the project. The lack of a human resource assessment impedes the development of a targeted training plan. Despite this fact, large amounts of training have been carried out due to the efforts of the Training Advisor to identify needs.

The Out of Country training strategy appears to follow a demand driven approach tied to needs of the SILAISs. Training has been tied to the development of MH/CS services and supporting systems such as IEC and supply systems. Although all training has been approved by MINSA and USAID to date, care should be taken to ensure that future requests stay close to DHS priorities given the decentralized nature of the training needs identification process.

Given that the IE&C activity is planned to begin later in the project, USAID and MINSA should re-assess its utility for DHS since major World Bank funding is being provided for these activities.

Commodities and Logistics Sub-Component

This component is designed to support the MH/CS component. The work performed by USPHS and MSH on this component has been of high quality. CIPS staff is knowledgeable and active in pursuing solutions to problems. Stockouts are a problem but DHS-supported SILAISs experience less stockouts than others. There is a high rate of family planning product stockouts. The high price of US-sourced commodities is of concern to CIPS. A survey of warehouse conditions may be needed based on the team's observations in the one that they visited.

Alternative Sources of Finance Component

This component has made limited progress to date with one study completed and on time and another submitted late and in draft. A total of four are planned. Whether this rate of progress is acceptable must be weighed against other project priorities and the political climate for alternative financing in Nicaragua. Since financing MH/CS services is apparently a high government priority, planned studies should be completed as soon as reasonable. Should project resources be limited, consideration should be given to identifying other donors to finance these studies.

Management, Finance and Decentralization Component

Progress towards the objectives of this component has been systematic and sustained. The products delivered to date meet the needs of MINSA as it pursues its financial management systems development and decentralization objectives. It is being managed by DGI and MSH successfully.

Management of the Project by MSH

While substantial progress has been made on most of the DHS project's component, some deficiencies may be due to the assignment of too many tasks to the COP in particular for the ASC and AFSC components. Although responsibility for performance still rests with the contractor, the acceptance of too many tasks can be responsible for project performance problems.

Systems are in place to measure overall project progress through annual reports and workplans. For the MH/CS component it appears that these plans could be improved. In some cases, notably immunization policy and the acceptability of key studies and certain workplans, communications can be dramatically improved.

Donor Coordination

There is a need for increased donor coordination. Emphasis should be on increasing donor impact through greater coordination. The need for a National SILAIS Commission is questioned given the existence of three mechanisms in MINSA to coordinate donor activities.

Roles of USAID/Nicaragua and MINSA in the project

USAID/Nicaragua and MINSA have done a satisfactory job addressing their management responsibilities for the DHS project. Concerns about performance have been communicated informally and formally. Review of the status of covenants between USAID and MINSA shows that monitoring is being adequately addressed. An improved project monitoring plan could alleviate problems related to performance expectations and put management on a sounder footing for the future.

RECOMMENDATIONS

The following is a summary of the recommendations as stated in the report.

Accelerated Start Component

Consider completing the Human Resources Assessment: MSH and USAID should consider whether the completion of the Assessment would serve current project needs. If so, MSH should consider identifying and contracting for short term technical assistance to do this study. The completion of the study satisfactorily could be a critical step to identify training requirements for MINSA personnel.

Maternal Health and Child Survival Component

Restructuring the MH/CS Component: To accomplish the objectives of the MH/CS Component, MINSA and USAID/Nicaragua should reassess what MH/CS activities are to be promoted in the four SILAISs. The restructuring of the MH/CS component should emphasize the activities in the control of diarrheal diseases and the treatment of ARI that appear to have been satisfactorily advanced to date and maternal health including birth spacing and nutrition education activities. The activities being promoted for a particular SILAIS should reflect the assessment of the MH/CS problem for that SILAIS.

The next workplan should identify what specific activities in the four priority areas will be undertaken in each of SILAIS being supported by the four Technical Advisors. A rationale explaining the approach for each SILAIS should be presented in the workplan. As a part of the process of workplan development, each Technical Advisor should prepare a workplan for the SILAIS in which he or she works. Although these have been regularly prepared in the past, a more collaborative approach might benefit the project. This workplan should reflect a team approach on the part of MINSA officials, particularly in the four SILAISs, USAID/Nicaragua, PL480 Title III, USAID-funded PVOs and the MSH Team.

Immunization Activities: As identified in the project design, PAHO should have lead responsibility for implementing DHS-supported immunization activities. Those activities identified in MSH's project contract should be coordinated with PAHO and MINSA. The PAHO managed Expanded Program of Immunization (EPI) activity in the DHS Project is an area where a sustained effort must be made to ensure proper coordination between PAHO, MINSA, USAID/Nicaragua, and the MSH Team.

Training and Information, Education, and Communication Sub-Component

Annual Training Plan: The annual training plan should reflect the requirements identified in the Human Resources Assessment that has yet to be completed. The proposed training activities should be developed in a context of an articulated training strategy. The strategy and the actual training activities identified should reflect the priorities of the MH/CS Component. The training activities and their estimated duration and cost should be identified as well as the pedagogy that is to be employed for the specific training activity.

OOC Training Plan: The OOC Training Plan should demonstrate how the specific OOC training activities relate to DHS Project priorities. As the plan is revised in coming years, care should be taken to ensure that this link is clearly maintained.

Reexamine Need for an IE&C Activity in the DHS Project: USAID/Nicaragua and MINSA should reexamine the need for an IE&C activity within the DHS Project. As part of reconsidering the advisability of moving ahead with the IE&C activity, it should determine what other donors, including the World Bank and PAHO, are doing and intend to do. Previous IE&C plans should be re-examined if a decision is made to proceed.

Commodities and Logistics Sub-Component in Support of the MH/CS Component

USPHS Work with MINSA to Review Adequacy of DHS Project-Funded Supplies and Equipment: USAID/Nicaragua should request that USPHS work with MINSA to review the DHS Project-funded supplies and equipment requirements necessary to adequately support the MH/CS Component in the five SILAISs through the life of the project. USPHS should prepare estimates of the supplies and equipment and the budget required for USAID/Nicaragua and MINSA review. This review should include a review of proposed "switching" of purchases by MINSA and USPHS. A procurement plan should be developed that plans for the purchasing and stocking of supplies and equipment so as to ensure that their availability is timely and sustainable.

UNFPA Provision of Family Planning Commodities: USAID/Nicaragua should coordinate with MINSA and the United Nations Family Planning Association (UNFPA) regarding shortages of family planning commodities.

Repair of Warehouse Facilities: A survey of warehouse conditions should be undertaken before supporting MINSA's desire to decentralize the warehouse function. USAID/Nicaragua should explore with MINSA and the World Bank the possibility of repairing and/or upgrading warehouse facilities down to the lowest level.

Alternative Sources of Finance Component

Assessment of Studies to Be Executed in the ASFC: USAID/Nicaragua in consultation with MINSA and Ministry of Finance (MOF) should reassess the validity of the studies currently programmed to be executed in the ASFC. Only studies that will contribute directly to addressing financing health sector priorities should be undertaken.

Management of the Studies of the ASFC Component: Consideration should be given to having the individual studies be managed by a series of short-term study managers. However, management of this component should still remain with MSH.

Lack of DHS Project-Funding for ASFC: Should a determination be made that there is a shortage of funds in the project to continue this component, consideration should be given to identifying other donors that could undertake these studies.

Management, Finance, and Decentralization Component

Other Donor Activities: Activities concerned with the installation of the FMS being supplied by other donors should be monitored to ensure that no deficiencies occur.

Management of the DHS Project by MSH

Contractor Management of the DHS Project and the MH/CS Component: It is critical that the composition of the contractor team for the MH/CS Component be determined prior to assessments of MH/CS problem for each target SILAIS being undertaken and activities being identified and designed for each SILAIS. Overall project management has room for improvement as concluded in the previous discussion.

Management of the Studies of the ASFC Component: Consideration should be given to having the individual studies be managed by a series of short-term study managers.

Use of Management Tools: In order to systematically perform their management responsibilities, USAID/Nicaragua should request that MSH augment its management system in these ways:

! Upgrading of workplans to include objectives and indicators for improved service delivery in both SILAIS' and central Ministry for the kinds of interventions most directly affecting them.

! A periodic component status report for each component that has the following format:

-- Activities and accomplishments for the period reported on. (Where the activities have varied from the workplan in terms of the nature or timing of the activity, this should be noted in the report. It may be appropriate to update the workplan at this juncture depending on the nature and magnitude of the change);

-- Projected activities for the next reporting period;

-- Project implementation problems; and

-- Status of resolution of the problems identified in the previous reports.

! Periodic and formal review meetings to improve DHS Project oversight to be conducted by the USAID Project Officer with the MSH Chief of Party. Consideration should be given to establishing a periodic review meeting to coincide with the review of the contractor's periodic component status report. MSH reports that such a meeting was held in July 1995 with good results. The workplan and the periodic report would be the basic instruments to be used in the review. The agenda for the meeting could follow the format of the periodic report.

Donor Coordination

National SILAIS Commission in MINSA: USAID/Nicaragua should consider dropping the Covenant in the Project Agreement to create a National SILAIS Commission with a National Coordinator, given the existence of three other mechanisms in MINSA designed to perform coordination functions.

The Roles of USAID/Nicaragua and MINSA in the DHS Project

Development of a Monitoring and Evaluation Plan: In order to systematically perform the monitoring function, USAID/Nicaragua should upgrade the monitoring and evaluation plan to contain the following elements:

- **!** the activities (inputs) to be financed by the DHS Project and puts each of these activities in a time-frame.

- **!** the objectives, indicators, and the means of verification to determine if the activities have actually resulted in progress.

- **!** a periodic project status report for each contractor that has the following format:

  -- Activities and accomplishments for the period reported on. (Where the activities have varied from the contractor's workplan in terms of the nature or timing of the activity, this should be noted in the report. It may be appropriate to update the contractor's workplan at this juncture depending on the nature and magnitude of the change);

  -- Projected activities for the next reporting period;

  -- Project implementation problems; and

  -- Status of resolution of the problems identified in the previous report.

- **!** periodic and formal review meetings to improve DHS Project oversight. The Project Officer should consider a periodic review meeting to coincide with the review of the contractor's periodic project status report. The contractor's workplan and the periodic report would be the basic instruments to be used in the review.

DECENTRALIZED HEALTH SYSTEMS PROJECT DATA SHEET (11/95)

1. Country: Nicaragua

2. Project Title: Decentralized Health Systems

3. Project Number: 524-0327

4. Project Dates: March 31, 1993 - March 30, 1999

   a. Date of Initial Project Agreement: March 1993
   b. Project Assistance Completion Date (PACD): March 30, 1999

5. Project Funding: (amounts obligated to date in dollars or dollar equivalents from the following sources)

a.	USAID Bilateral Funding	$22,000,000 US
b.	Host Country Counterpart Funds	$ 7,400,000 US
	Total	$29,400,000 US

6. Mode of Implementation: USAID Contractor-Management Sciences for Health

7. Project Designers: Government of Nicaragua and USAID/Nicaragua

8. Responsible Mission Officials:

   a. Mission Director:
      Current: Mr. George Carner (9/94-present)
      Former: Ms. Janet Ballantyne (3/31/94-8/94)
   b. Project Officers:
      Current: Ms. Sheila Lutjens (3/31/95-present)
      Former: Ms. Ursula Nadolny (3/31/93-3/31/95)

9. Previous Evaluations: None

FORWARD

A. Project Description

The Government of Nicaragua (GON) and the United States Government acting through the United States Agency for International Development (USAID) signed the Project Agreement for the Decentralized Health Services (DHS) Project on March 12, 1993. The DHS Project, a 5-year, $22 million US Dollar agreement with a Project Assistance Completion Date (PACD) of March 31, 1999, supports USAID/Nicaragua's Strategic Objective concerned with improving maternal and child health (MCH). The DHS Project is designed to complement the Ministry of Health's (MINSA) priority focus on improving the health of women and children.

An assessment of Nicaragua's health care system identified three major problems: the scope of services, the quality of services, and the excessive costs of the services. USAID/Nicaragua and the GON agreed that the health care system could not be sustained without continuous major inputs of donor resources. The DHS Project was fashioned to support MINSA to address this fundamental problem.

Nicaraguan maternal health and child survival (MH/CS) programs address preventable diarrheal and respiratory illnesses; provide immunizations for children and women of childbearing age; monitor growth and development of children; and provide maternal-prenatal, delivery, and postnatal care. The breadth of coverage is high and efforts are being made to improve the effectiveness of the care provided.

The DHS Project has as its core objective the improvement of maternal and child health in Nicaragua. This is to be accomplished by strengthening management capacity; increasing the effectiveness of, and access to, the public health resources; and encouraging the development of alternative sources of financing for health sector activities.

To accomplish the objectives, four components were designed into the DHS Project. These include:

1. Accelerated Start Component (ASC)

2. Maternal Health and Child Survival (MH/CS) Component with support from the following:

    -- Training and Information, Education, & Communication (IE&C) Sub-Component primarily supporting the MC/CS Component

    -- The Logistics and Commodities Sub-Component supporting the MH/CS Component

3. Alternative Sources of Financing Component (ASFC)

4. Management and Financial Decentralization Component (MFDC)

B. Purpose of Evaluation

To paraphrase from the Scope of Work (See Annex A), the purpose of this evaluation was to analyze the work undertaken in each component funded by the DHS Project. This was to be

accomplished by reviewing the project management structures designed to guide the implementation of each component. Each Component's progress to date was to be reviewed as a means of identifying DHS Project strengths and weaknesses so as to be able to recommend actions designed to improve the ongoing implementation of DHS Project-funded components.

C. Methodology

The process for evaluating the various project components involved analyzing project documentation which is cited in Annex B (Documents Consulted) and interviewing persons identified in Annex C (Persons Contacted) involved in the design, monitoring, and implementation of DHS Project-funded components.

In addition to the key questions identified in the Scope of Work that were used to guide the interviews conducted by Evaluation Team members, the team reviewed each component in terms of:

- # the management of the Component;
- # input/output mobilization of the Component;
- # progress towards achievement of each Component's objective.

D. Organization and Preparation of Report

The Forward contains a summary description of the nature and parameters of the work undertaken by the MSI Team. Each DHS Project Component and Sub-Component is discussed in Chapters I through VI. MSH project management issues are described in Chapter VII. This is followed by a discussion of Donor Coordination in Chapter VIII and the performance of USAID/Nicaragua and MINSA with regards to the DHS Project in Chapter IX. The original draft was prepared by the field evaluation team whose members are listed below. Additional edits in the draft based on information provided by MSH and USAID were prepared by Larry Heilman and Janet Tuthill of the MSI staff.

E. Team Composition

W. Timothy Farrell, Ph.D., is an independent consultant specializing in the evaluation of management and operational systems in international health and general development programs. He has been Director for programs in Guatemala, Colombia, Bolivia, Nicaragua, and Egypt. Further, he has been Corporate Director of Evaluation for a major international non-governmental organization with evaluation design, implementation, and oversight responsibilities in over 25 countries.

Oralia Puente, Ed.D. and Ed.M., has 25 years of experience in the fields of evaluation, health, health education, maternal and child health program experience, and early childhood education. Among her varied assignments include: working with both domestic and international programs, she has provided training/education about health and HIV prevention among Latino women and children in Southwest Texas; trained mothers and caregivers in how to stimulate children's cognitive development skills in Jakarta, Indonesia; and evaluated the "Family and Child Program" and recommended changes for further program expansion in Jakarta, Indonesia.

Rose M. Schneider, R.N. and M.P.H., was the Evaluation Team Leader. Ms. Schneider has 20 years' U.S. and international experience in project design and evaluation in the health sector. Ms. Schneider has made significant contributions to USAID, the World Bank, and the United Nations in programs concerned with child survival, primary health care, maternal child health/family planning, nutrition, and water supply and sanitation. Recent assignments include leading a team to develop the concept paper for a national maternal and child survival project for USAID/Peru and designing technical

aspects of national maternal health, perinatal care, and child survival programs in Guatemala for the Inter-American Development Bank.

F. Acknowledgements

The Evaluation Team expresses its gratitude to members of MINSA at the central level, especially the office of the Vice Minister of Administration and Finance and the committees coordinating the DHS Project; the participating Sistemas Locales de Atencion Integral en Salud/Local Integrated Health Care Systems (SILAIS) in Managua, Boaco, and Matagalpa; and, the Directors of the Direccion General de Normalizacion de Insumos Medicos (DGNIM) and Centro De Insumos Para La Salud (CIPS). Representatives of these organizations were available for repeated visits as required.

In the same vein, USAID/Nicaragua afforded the team every courtesy and extensive opportunity to pursue information collection relevant to the assignment. Access was provided to archives and files which helped fill in gaps in information.

Representatives of the Pan American Health Organization (PAHO) also gave generously of their time despite tight schedules. Representatives of other donor organizations provided interviews and documents as requested.

MSI would like to thank MSH for providing substantial comments to the original draft which allowed for a more accurate picture of project progress. The time invested by their staff in developing these comments is sincerely appreciated.

CHAPTER I: ACCELERATED START COMPONENT

A. Findings

The Accelerated Start Component (ASC) funded a series of studies designed to provide the analytical underpinning for the DHS Project. The studies and their status is as follows:

Human Resources Assessment: A comprehensive assessment of MINSA's workforce was to be undertaken. Recommendations for training MINSA staff in MH/CS activities were to be identified by the assessment.

Status: Management Sciences For Health (MSH) took direct responsibility for conducting the assessment. Several revisions were made and USAID/Nicaragua determined that further revisions would not be productive. The award fee for the assessment was not made because of the late submission of the report. As a consequence, the present draft does not adequately serve as an instrument for designing and programming future MINSA training requirements.

Survey of Ongoing and Proposed Donor Activities Report: A one month consultancy was planned for gathering the data and preparing the report of ongoing and proposed donor activities to update USAID/Nicaragua's information on donor activities. This report was also to assist the National SILAIS Commission in its task of coordinating and developing annual workplans for all donor activities.

Status: The Donor Coordination Study was completed by the Chief of Party (COP) of Health Management Systems (HMS) Team. The study consulted PAHO, World Bank, IDB, Danida, Swedish Assistance, Dutch Assistance in addition to USAID. These are eight donors whose activities are most closely related to DHS Project activities. The report was accepted by USAID/Nicaragua as satisfactory.

Baseline Data and End of Project Status Indicators Assessment: A database from which to develop baselines against which to measure progress during the period of DHS Project implementation was to be developed.

Status: The Baseline Data and EOPS Indicators Study was undertaken by MSH, delivered to USAID/Nicaragua by MSH, reviewed by USAID/Nicaragua, and revised a number of times.

Cost Containment and Cost Recovery Assessment Report: The rationale for promoting this study was to review MINSA's plans for cost containment and recovery.

Status: This study was submitted on time and accepted by USAID/Nicaragua. The Evaluation Team assessed this report to be of good quality.

Preliminary Analysis of the Financial Administration System for the Health Services of the Ministry of Health: This analysis was to be the beginning of the work to be undertaken in the Alternative Sources of Financing Component (ASFC).

Status: This study was submitted July 1994 and accepted by USAID/Nicaragua. The Evaluation Team assessed this report to be of good quality.

An Assessment of the Nicaraguan Ministry of Health's Compliance with the Finance-Related Conditions of its USAID PL-480 Title III Agreement: This study reviewed MINSA's compliance with the conditions contained in the PL-480 Title III Agreement.

Status: This study was submitted June 1994 and accepted by USAID/Nicaragua. The Evaluation Team assessed this report to be of good quality.

Assessment of Commodity Needs Study: The assessment of the commodity requirements for the DHS Project was assigned to U.S. Public Health Service (USPHS).

Status: The Assessment of Commodity Needs Study was prepared by USPHS, delivered to USAID/Nicaragua in a timely fashion, and judged acceptable by USAID/Nicaragua.

Tracking System for Commodities Study: MSH was assigned the responsibility of developing a tracking system for DHS Project commodities.

Status: The commodity tracking systems report was prepared by MSH, delivered on time to USAID/Nicaragua, and judged acceptable by USAID/Nicaragua.

Financial Management Systems Report: The Financial Management Systems Report done by MSH's sub-contractor, Development Group, Inc. (DGI), was to serve as the basis for work undertaken in the Management and Financial Decentralization Component (MFDC).

Status: The Financial Management Systems Report was prepared as directed and judged acceptable by USAID/Nicaragua.

ASC Activities Final Report: A final report summarizing each ASC activity was to be submitted to USAID/Nicaragua.

Status: This report was delayed seven months and accepted by USAID.

It should be noted that during the first six months of the DHS Project, the COP served both as de facto Team Leader for the ASC and COP for the longer term technical assistance effort.

B. Conclusions

In summing up the ASC studies results it can be seen that almost all studies were completed satisfactorily and on time. There were a limited number of cases where timeliness was an issue and they have been noted above.

The Human Resources Assessment that was executed directly by MSH and should have been completed as a prelude to technical assistance activities initiated in other components of the DHS Project, was not satisfactorily completed. It can be argued that if it had been available, it would have contributed to project decisions regarding capacity building needs.

C. Recommendation

1. **Consider completing the Human Resources Assessment:** MSH and USAID should consider whether the completion of the Assessment would serve current project needs. If so, MSH should consider identifying and contracting for short term technical assistance to do this study. The completion of the study satisfactorily could be a critical step to identify training requirements for MINSA personnel.

CHAPTER II: MATERNAL HEALTH AND CHILD SURVIVAL COMPONENT

A. Findings

Background

The Maternal Health and Child Survival (MH/CS) Component is one of the core components of the DHS Project. A senior MH/CS Advisor is responsible for directing the activities of this component. The MH/CS Advisor supports four Nicaraguan Technical Assistants that are tasked with promoting MH/CS activities and training in four pilot SILAISs. Five areas critical to achieving health objectives in the four SILAISs that are identified in the Project Paper are:

- control of diarrheal diseases
- treatment of acute respiratory infections (ARI)
- maternal health including birth spacing
- nutrition education
- immunizations (to be implemented by PAHO)

Workplans for the MH/CS Component

Though MSH submitted a 1994 workplan for the MH/CS Component that included 14 separate activities, the workplan did not develop a clear course of action regarding how the MH/CS priorities were to be orchestrated in the five SILAISs. MSH chose immunizations as an entry strategy to increase likelihood of acceptance of the other four agreed on interventions. Specific activities relating directly to one or more of the first four priorities were included in each SILAIS' plan. Verbal guidance was provided in meetings by USAID/Nicaragua to reduce emphasis on immunizations and concentrate on the other four intervention areas.

The 1995 MH/CS workplan was presented in early 1995. It was a continuation of the approach taken in the 1994 MH/CS workplan. No clear course of action was presented regarding how the MH/CS priorities were to be addressed. This 1995 MH/CS workplan was not accepted by either MINSA and/or USAID/Nicaragua and was returned to MSH for revision of the MCH and Decentralization components of the plan. A revised workplan was presented in late June 1995 taking essentially the same approach that had been set forth in the earlier draft. Once again, the MH/CS workplan was viewed by USAID/Nicaragua and judged to be a collection of disparate activities that did not reflect an integrated strategy designed to promote the four MH/CS priorities in the four pilot SILAISs. The decentralization addendum was approved later, the MCH addendum was never approved. Steering committee members described the draft plan as having a micro approach which did not link the detailed activities. USAID/Nicaragua reports that considerable guidance had been given to the MH/CS Advisor regarding how to restructure the 1995 MH/CS workplan. MSH notes that the 1995 MH/CS workplan was approved by the Director General of Integrated Services for Women and Children and that the Steering Committee has never met to approve the revised workplan. There is no evidence presented that the total revised workplan was ever approved by the Steering Committee.

MSH and USAID/Nicaragua disagree on the degree of emphasis to be given to immunization. MSH maintains that concern about measles led the USAID and MINSA members of the steering committee to give immunizations highest priority. USAID maintains that at no time during any meeting by the current GDO and Health Officer was MSH instructed to emphasize immunizations.

MH/CS Component Implementation

The Evaluation Team found that a variety of MH/CS activities had been promoted in the five (now four) SILAISs as a result of the efforts of the MSH Team. These DHS Project-financed activities include:

- # Community surveys in the targeted SILAISs to determine the nature and extent of the health problem.

- # Assisting in the development of a permanent registry for children (and completing one for women) by cohorts to facilitate delivery of all services to be provided in the Integrated Model. A number of "lost" children were identified for vaccination coverage. This work started with the immunization census as the Integrated Model was still being conceptualized by MINSA.

- # A survey of 57 oral rehydration units (ORU) was undertaken in the SILAISs to assess the location of the ORUs and supplies and equipment available at the ORUs. The survey results were analyzed and reported.

- # A study of current treatments of acute respiratory infections (ARI) was done with MSH assistance. The study analyzes various approaches physicians are employing to treat ARI. In the clinics where these studies were conducted with the active participation of physicians, positive changes have been noted in ARI treatments being employed by the physicians. In September 1995 the MH/CS Advisor presented the results of the ARI study at a MINSA conference .

- # Activities have been undertaken in the SILAIS being supported by the Technical Advisors in the area of maternal health. In November 1994, MSH participated in a meeting to analyze a maternal mortality study conducted by MINSA Staff.

  In March 1995, MSH participated with MINSA in the development of a study that interviewed a selected group of women regarding their views on the quality of care they received while pregnant. Problems identified by the focus groups included insufficient coverage, insufficient promotion of services, lack of an effective referral system, and the lack of concrete health advice including family planning.

  In January 1995, MSH participated in the workshop "Taller Consejeria en Planificacion Familiar." The methodology employed was described and results were presented in a study. Participants in the workshop pledged future support for family planning activities.

  In one SILAIS, a Technical Assistant discussed use of two-way radios in rural areas as part of an emergency alert and transport system for delivery emergencies. SILAIS directors placed special emphasis on the use of two-way radios.

- # The MH/CS Senior Advisor participated with MINSA in the review of nutrition status monitoring tools used to measure child survival. The Advisor was instrumental in changing the thinking of MINSA personnel regarding the uses of Growth Charts employed in the past in which children were identified as "at risk." As a result of the Advisor's intervention, MINSA has revised the Growth Chart Form being used and trained MINSA personnel in its applications.

At the time of the evaluation team's visit, MSH was conducting a nutrition study on Boaco which identified the age at which nutritional problems start (six months).

MSH was instrumental in the successful introduction of DepoProvera in MINSA health facilities in Jinotega.

Training in family planning counseling has been provided to health personnel in all the project SILAISs. MINSA provision of CYPs is now estimated to be double USAID's target for 1998.

- An analysis of the health problems in Ciudad Sandino was undertaken. The report discussed the mission of the health center, health objectives of the municipality, and identified strengths and weaknesses in the health system. Conclusions included that problems were more management than technical and identified the need for team work to address the problems.

- A review of the MINSA's Model for Integrating MH/CS Services in the SILAISs was undertaken with the MSH involvement. The analysis consisted of reviewing concepts of integrated care, the flow of patients through the clinic setting, and various methods to improve access to care. The Evaluation Team concluded that the rapid expansion of the Integrated Model will require MINSA to train/retrain staff to assure that they can carry out all the tasks to be integrated. For example, nurses, who previously focused on immunizations, may need to be retrained if they are to assume responsibility for examining and counselling mothers and children.

Immunization Activities in the MH/CS Component: MSH and PAHO

$3.5 million Dollars US was provided out of the DHS Project to the Pan American Health Organization (PAHO) to provide technical assistance and commodities for child immunization activities throughout the SILAISs.

The MH/CS Advisor of the MSH Team gave high priority to the development of a child registry, to be used to monitor delivery of all preventive services to children including, but not limited to immunizations. This child registry initiative and its application to immunizations received approval from the former Vice Minister and current Minister of Health. Contract benchmarks and target awards in MSH's agreement with USAID include specific mention of immunization deliverables. The benchmarks are focused on the integration of immunizations with the other four project priority activities. The issues of the role of immunizations in the project seems to be one of degree not intent. The use of immunizations as an entry point for MH/CS is not apparently in question. The issue became rather how much immunization should be taking place within this component and how much should be left to the PAHO intervention.

Guidance was given to the MH/CS Advisor by the DHS steering committee in November 1994 to reduce MSH involvement in the immunization activity of the MH/CS Component and to coordinate all activities in this area with PAHO. A possible measles epidemic caused this instruction to be reversed in February 1995. MSH was instructed that the work to be undertaken by MSH regarding immunization activity is not to overlap or contradict PAHO's mandate. MSH states that collaboration with PAHO has been successful except for immunizations and PL-480 activities.

MINSA's Model for Integrating MH/CS Services in the SILAISs

MINSA has mandated that the model for integrating MH/CS services is to be rapidly expanded throughout the SILAISs. MINSA developed an Operations Manual for operationalizing the Modelo Integral or Integrated Model through a broad process of review and developing consensus with assistance of various actors in the health sector working in Nicaragua.

The work being pursued in the MH/CS Component in the five SILAISs being supported through the DHS Project supports the operationalization of the Integrated Model. The Integrated Model is designed to provide comprehensive health care to women and children by improving the quality of the services and making the care more client centered and gender focused. Operationalizing the Integrated Model by MINSA involves assessing the nature and extent of the health problem in the community; establish norms and standards of services to be provided; organization of MH/CS services and the actual facilities where the services are provided; and promoting community participation in the health system.

The Evaluation Team's SOW required an assessment of the rapid expansion of the Integrated Model, and its implications for the quality of the care to be provided as a result of operationalization of the Integrated Model. The Evaluation Team agreed with the conclusions of the MSH Team that if the Integrated Model is to be effective, MINSA must undertake a major training program to assure that the staff in the SILAISs can carry out all the integrated tasks. For example, nurses who previously focused on immunizations will need to be retrained if they are to assume responsibility for examining and counselling of mothers and children. Expansion of the Integrated Model will require careful planning and monitoring of its operationalization to assure the quality of MH/CS services is maintained as it expands to all of the SILAISs. MSH also maintains that dramatic improvements in the supply and supervision systems will be needed to meet the objectives of the Integrated Model.

MINSA/MSH Team Relations for the MH/CS Component

The DHS Project design mandated that the MH/CS Advisor work directly with SILAIS Directors. This MH/CS Advisor's direct interaction with SILAIS Directors caused concern on the part of MINSA officials in the central bureaucracy who felt that they were unnecessarily being bypassed. In 1994, responsibility for MH/CS activities within MINSA was spread throughout MINSA with no single coordination point. Consequently, no centrally-located, DHS Project counterpart for MH/CS activities was established. With the reorganization of MINSA and the establishment of the Integrated Care Division (ICD) in early 1995, all MH/CS plans and activities could be reviewed by ICD. ICD has also assumed leadership of the new Integrated Model of Care program. This reorganization of MINSA provides a single focal point for defining MINSA MH/CS directions in ICD. It also allows a single point for MH/CS Advisor interaction and coordination.

B. Conclusions

The 1994 and 1995 MH/CS workplans present a series of activities to operationalize the MH/CS Component. However, both workplans lack specificity in terms of how the four MH/CS priorities are to be translated into specific activities in the five SILAISs. What is missing in the logical presentation of the activities is some linkage between these activities and the attainment of the main objectives of each component. Numerous assumptions need to made about other changes that are required besides the MSH managed interventions to assure achievement of the objectives. The DHS steering committee told MSH that their priority was to be the development and implementation of the Model Integrated Services for Women and Children.

There was no clear pattern of technical assistance or training being provided by the MSH Team of the COP, MH/CS Senior Advisor, the Training Advisor, and the five Technical Advisors. The activities reviewed by the Evaluation Team, being supported by the MSH Team in the four priority areas, do not appear to be systematically applied in the five SILAISs as a means to develop an effective

approach to addressing the health problems associated with maternal health and child survival. MSH's contract benchmarks specify the development of supporting systems, not direct involvement with specific intervention, except for immunizations. As a consequence it does not appear that the assistance provided by MSH would realistically result in meeting the objectives of the MH/CS Component.

The strategy could be inferred from the choice of approved activities but the selection of the interventions is not made explicit. Without this step, MSH could find itself working very diligently producing agreed on outputs that may or may not achieve the results needed. The MSH expressed strategy of trying activities in each SILAIS according to local priorities, and then diffusing the successful interventions appears acceptable if there is insufficient knowledge on the nature of the constraints to successful implementation. If constraints are known, a more realistic model might include a systematic experimental model for each SILAIS that sets out to test the appropriate mix of interventions, in particular the determination of how much assistance is required to cause the systemic change. It can be expected that this will vary across the five SILAIS based on different levels of capacity in each one and for each intervention area.

The problem of evaluating performance to date is further compounded by the nature of the indicators being used in the annual report, no doubt based directly on project objectives. MSH is faithfully reporting progress on indicators at the output level which may not be directly linked to the strategy being actually employed. Using the registry as a starting point, MSH is in a position with the DHS steering committee approval to make priority recommendations on the most effective means of implementing the component. The link between the support service improvement activities and the attainment of the higher level objectives (IMR, MMR, TFR) needs to be articulated. That link is often the measurement of improvements in service delivery for key MH/CS interventions by MINSA personnel. The activities performed by MSH are well documented in the annual report. The next step is to show how these reflect changes in service delivery and then impact on the purpose level indicators. At the purpose level, achievement is the responsibility of a number of actors including MSH, at the next level before the project outputs, service delivery changes are the responsibility of MINSA with help from MSH's targeted technical assistance. At the project output level, the achievement of agreed on activities in the workplan are of course the responsibility of MSH. This clear distinction in impact level, performance and responsibility could assist the project in clarifying what the appropriate mix of interventions should be over time. MSH need not take responsibility for purpose level success on its own.

Activities concerned with controlling diarrheal diseases and the treating of ARI appear to have been satisfactorily advanced. A significant number of activities appear to be undertaken satisfactorily in the maternal health area as well.

There is controversy as to whether child immunization activities being promoted by PAHO are sufficient to meet project objectives. MSH states that they are insufficient citing the lack of significant increases in survey-measured coverage rates in children under the age of one since the 1993 CDC Nicaraguan Health Survey. PAHO opposed the child registry according to MSH. This registry was seen as needed to monitor individual vaccination status. Communications between PAHO and MSH on immunization rates have been problematic. The evaluation team was satisfied that PAHO appeared to be meeting DHS project objectives.

The process for restructuring the MH/CS Component should be pursued by MINSA, PAHO, USAID/Nicaragua, and the contractor as appropriate in a collaborative fashion. The process should involve the following steps:

- # An assessment of the key MH/CS problem for each target SILAIS should be executed with inputs from MINSA, PAHO, USAID/Nicaragua, PL480 Title II USAID-funded PVOs and the MH/CS contractor team as appropriate.

- # Activities from the four priority areas and immunization (PAHO's responsibility) should be identified and designed for each SILAIS.

- # Training activities should be identified for personnel responsible for managing MH/CS activities in the target SILAISs.

- # USPHS, working with MINSA, USAID and the contractor where appropriate, should identify the medical supplies and equipment necessary to complement the MH/CS activities in the four SILAISs.

- # Workplans and monitoring plans should be developed for each SILAIS by the MH/CS contract team that reflect consultation and concurrence with MINSA (both field and central headquarters), USAID/Nicaragua, PL480 Title III, USAID-funded PVOs and PAHO. The MSH workplans are part of this process and a necessary component, but must be supplemented by information form the other actors. As discussed above, the articulation of changes in service delivery anticipated would be a helpful addition to the measurement of the progress of the project. This would be in addition to existing indicators being tracked by MSH and would require joint planning with MINSA and other key actors.

C. Recommendations

1. **Restructuring the MH/CS Component:** To accomplish the objectives of the MH/CS Component, MINSA and USAID/Nicaragua should reassess what MH/CS activities are to be promoted in the four SILAISs. The restructuring of the MH/CS component should emphasize the activities in the control of diarrheal diseases and the treatment of ARI that appear to have been satisfactorily advanced to date and maternal health including birth spacing and nutrition education activities. The activities being promoted for a particular SILAIS should reflect the assessment of the MH/CS problem for that SILAIS.

   The next workplan should identify what specific activities in the four priority areas will be undertaken in each of SILAIS being supported by the four Technical Advisors. A rationale explaining the approach for each SILAIS should be presented in the workplan. As a part of the process of workplan development, each Technical Advisor should prepare a workplan for the SILAIS in which he or she works. Although these have been regularly prepared in the past, a more collaborative approach might benefit the project. This workplan should reflect a team approach on the part of MINSA officials, particularly in the four SILAISs, USAID/Nicaragua, PL480 Title III, USAID-funded PVOs and the MSH Team.

2. **Immunization Activities**: As identified in the project design, PAHO should have lead responsibility for implementing DHS-supported immunization activities. Those activities identified in MSH's project contract should be coordinated with PAHO and MINSA. The PAHO managed Expanded Program of Immunization (EPI) activity in the DHS Project is an area where a sustained effort must be made to ensure proper coordination between PAHO, MINSA, USAID/Nicaragua, and the MSH Team.

CHAPTER III: TRAINING AND INFORMATION, EDUCATION AND COMMUNICATION SUB-COMPONENT

Training Sub-Component

A. Findings

The training activities were designed to be focused on MINSA staff, community health workers (CHWs), and traditional birth attendants (TBAs) in support of the MH/CS and the Management, Finance, and Decentralization Components (MFDC) by:

- # developing curricula and enhancing training capacity;
- # assisting with the implementation of training in five SILAISs; and -
- # assisting with the design and execution of an information, education and communication (IE&C) campaign for MH/CS activities.

The Training Advisor was assigned to work with the Director of Education in MINSA.

The Human Resources Assessment prepared under the ASC, which was to have identified training requirements in the health sector, did not adequately serve this purpose. Consequently, when the Training Advisor arrived, she conducted site visits, interviewing personnel working in the health sector in order to assess training needs. A 1994 Training Plan was prepared by the Advisor and accepted by USAID/Nicaragua. The 1995 Training Plan prepared by the Training Advisor was well-structured with major categories for training identified. Some 8,000 person days of training were planned for 1995.

In 1994, 8,078 person days of training were provided. No specific training had been planned originally for that year. Initial training efforts were focused on management issues and enhancing team building skills. In 1995, 7,800 person days of training were reported in the first six months against the target of 8,000 for the entire year. This level of training represents an earlier than expected achievement of the target and has become possible because of the early expansion to community level training of volunteer health workers and midwives. To date in 1995, the Training Advisor has supported a course for the staff of three SILAISs in the clinical treatment of acute respiratory infections (ARI) and has plans for courses for the control of diarrheal diseases. The first 10 day TOT course was completed just before the arrival of the evaluation team. These are part of the more than a dozen courses supported by the Training Advisor in all five DHS project SILAISs.

The training methodology pursued by the Training Advisor in her work with MINSA was also assessed by the Evaluation Team. They found that frequent meetings have been held with host government officials to fix the objective and the scope of the training prior to the actual training activity; TOT training was developed and presented by MINSA personnel with MSH acting as facilitator; and follow-up evaluations of training events were a standard approach on the part of MSH sponsored training.

A TOT training manual for facilitators was developed by UNAN personnel contracted by MSH and supervised by MINSA, MSH and PAHO personnel. The Training Advisor was directly involved as the principal editor of the manual. The manual may contribute to improving the teaching facility of instructors working in the health sector. MSH notes that a senior PAHO consultant stated that the manual was the best document of its kind he had ever seen.

The Trainer Advisor has established good working relations with personnel in MINSA including personnel at the SILAIS level and with the PAHO Human Resources Advisor.

B. Conclusions

Significant progress has been made in reaching training objectives. The lack of a human resource data base for the health sector from which to develop a targeted training plan impedes the DHS Project-funded training effort. Despite this fact, large amounts of training have been carried out due to special efforts by the training advisor to identify needs.

C. Recommendation

1. **Annual Training Plan**: The annual training plan should reflect the requirements identified in the Human Resources Assessment that has yet to be completed. The proposed training activities should be developed in a context of an articulated training strategy. The strategy and the actual training activities identified should reflect the priorities of the MH/CS Component. The training activities and their estimated duration and cost should be identified as well as the pedagogy that is to be employed for the specific training activity.

Out of Country Training

A. Findings

An Out of Country (OOC) Training Plan was developed in 1994. Of the 30 OOC participants planned for the five year OOC Training Plan, seven participants were to attend courses in 1995 and nine in 1996, and the remainder in the following years. The OOC Training Plan does not include information on OOC training supported by other donors. There is no discussion in the OOC Training Plan of the Human Resource Assessment undertaken in the ASC. The central strategy presented in the OOC Training Plan was to decentralize decisions concerning the use of this resource to the SILAISs. The provision of additional OOC training to those SILAIS' who made the best use of initial training was part of the strategy. The plan was accepted by both MINSA and USAID/Nicaragua. The link to other types of training being promoted by the DHS project and MINSA is not discussed in the plan.

MSH reports that 9 OOC participants have started their training as of September 1995. One MINSA official attended a course in Bolivia on supply system performance indicators. Training was provided at the University of Chile for three physician directors of municipal health services and one sub-director of a SILAIS in management of MCH services.

B. Conclusions

The OOC Training strategy appears to follow a demand driven approach tied to needs articulated by the SILAISs. Training is related to the development of MH/CS services and supporting systems such as IEC and supply systems. Although all training has been approved by USAID and MINSA, care should be taken to ensure that future training requests stay close to DHS priorities given the decentralized nature of the training identification process.

C. Recommendation

1. **OOC Training Plan**: The OOC Training Plan should demonstrate how the specific OOC training activities relate to DHS Project priorities. As the plan is revised in coming years, care should be taken to ensure that this link is clearly maintained.

Information, Education, and Communications (IE&C)

A. Findings

USAID/Nicaragua specified that a local advertising agency should be used in IE&C activities. However, local IE&C expertise has yet to be identified since this activity is planned for the third year of the contract (i.e. before March 1997). The Scope of Work for this IE&C sub-contract is to be written by USAID/Nicaragua.

The IE&C Plan as developed by MSH is characterized as a strategic plan, not intended to identify specific health problems to be addressed, but rather a strategic approach to developing MINSA's capacity to better utilize its existing IE&C resources, including the identification of health problems that should be addressed by IE&C interventions. While it discusses the IE&C activities of other agencies and the scope of work for MINSA's World Bank funded IE&C, the linkages are not clearly articulated. As these other activities come on-line funded by other sources, the relationship with DHS activities may become clearer. A World Bank loan is already providing resources for health messages on the radio and television. PAHO also reportedly has funding for IE&C activities.

B. Conclusions

Given that the IE&C component is planned for later in the project, USAID/Nicaragua in conjunction with MINSA should reassess the need for a DHS Project-funded IE&C activity given the presence of major World Bank resources. If the IE&C activity is to be fully developed, the first step in the process to establish an IE&C activity would be to develop an IE&C Plan that assesses the nature of the problem that IE&C resources are to address, articulates a strategy to address the problem, and updates information on other donor activity in the IE&C field.

C. Recommendation

1. **Reexamine Need for an IE&C Activity in the DHS Project**: USAID/Nicaragua and MINSA should reexamine the need for an IE&C activity within the DHS Project. As part of reconsidering the advisability of moving ahead with the IE&C activity, it should determine what other donors, including the World Bank and PAHO, are doing and intend to do. Previous IE&C plans should be re-examined if a decision is made to proceed.

CHAPTER IV: COMMODITIES AND LOGISTICS SUB-COMPONENT IN SUPPORT OF THE MH/CS COMPONENT

A. Findings

Background

The existence of an efficient delivery system of pharmaceutical and medical supplies and equipment is essential to the effective functioning of the health sector in Nicaragua. Until MINSA developed the Sistemas Locales de Atencion Integral de Salud/Local Integrated Health Care Systems (SILAIS) system, the logistics delivery system of MINSA was essentially a vertical one, providing supplies and equipment directly to the Health Regions for further distribution to lower health service levels.

The central bureaucratic structure within MINSA that administers the logistical system is composed of the Centro de Insumos para la Salud (CIPS); the Pharmaceutical Registry and Approval Directorate (Direccion de Farmacia); the Planning and Therapeutic Norms Directorate (Direccion de Normalizacion de Insumos Medicos); and the Purchasing, Storage, and Distribution Directorate (Centro de Insumos para la Salud).[1] Support for development of a logistics systems for the SILAISs was provided by DANIDA and the World Bank loan.

Technical assistance to support the logistics system before and during the implementation of the DHS Project has been provided through a Participating Agency Services Agreement (PASA) with the U.S. Public Health Service (USPHS). As early as 1990, USPHS provided short-term assistance to assess the logistics system. In September 1990, a "Report on Pharmaceutical and Medical Supply Situation in Nicaragua" was prepared. At the time, the purchasing, distribution, and storage functions were under the direction of COFARMA (Corporacion Farmaceutica) of MINSA under the supervision of Abastecimentos Medicos, another MINSA directorate. The USPHS 1990 report highlighted four major strengths of the logistics system: excellent warehouse facilities in Managua; appropriate computerization of warehouse operations; sufficient personnel; and a good transportation system.

At the Health Region level, however, the assessment noted deficiencies in a number of areas including pharmacy and dispensing practices, poor condition of regional warehouses, inadequate quality control measures, poor inventory control, need for better communications with MINSA, and the need to revise the MINSA formulary. In addition, observations were made regarding the poor condition of laboratory supplies and equipment, medical supply stock-outs, and insufficient housekeeping supplies. A number of recommendations were made in this report for improving the MINSA logistics system.

DHS Project Support Provided by USPHS and MSH

USPHS was directed to:

- prepare inventories of all essential commodities and associated training needs by MINSA for DHS Project activities not being provided by other donors;
- order on MINSA's behalf those commodities (other than contraceptives) needed to launch MH/CS efforts in the five focus SILAISs and be responsible for procuring replacement stocks of those commodities throughout the life of the DHS Project; and

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[1] Refer to the ASC Report: "Pharmaceutical Selection, Logistics and Use" by Lee, David, and Andres Calderin, July, 1994, pp 1-7 for a complete description of the structure.

- # arrange for or carry out with its own personnel any short-term technical assistance and training MINSA and USAID/Nicaragua determine is necessary to instruct MINSA and the five SILAISs in the proper uses of the commodities and technologies that will be provided.

MSH was directed to develop a system for monitoring the effectiveness of MINSA's logistical support activities. MSH and DGI consultants with their DGNIM and CIPS counterparts undertook a study in 20 Health Regions that included reviewing Logistics Indicators, Rational Use Indicators, Budget and Finance Indicators, and Quality Assurance Indicators as a critical part of this study. As a result of this work, a monitoring system was recommended by MSH that subsequently has been implemented by MINSA with modifications to reflect the new SILAIS system. The leadership of both the Direccion General de Normalizacion de Insumos Medicos (DGNIM), that performs the planning functions and CIPS, that performs the procurement functions, expressed enthusiasm for the new monitoring system. Twenty eight MINSA and DHS Project personnel attended a two-day workshop on how to implement the MSH developed system.

As part of the ASC, the USPHS sent a team to Nicaragua in November 1993 to undertake the "Assessment Report on Commodity Needs under the Nicaragua Decentralized Health Services Project." The findings of this study are discussed below.

The MINSA Logistical System

To establish priorities for pharmaceutical supplies and to ensure their availability, MINSA has defined three categories of pharmaceutical products. These are: 1) maternal child health (MCH) drugs; 2) drugs for non-immuno-preventable diseases and epidemics (e.g. cholera, malaria, dengue, tuberculosis); and 3) drugs for treatment of chronic diseases. Assessments to date have indicated that stock outs and shortages are reportedly most likely to occur in the priority MCH drugs. This is reportedly related, to some extent, to physician over-prescription and perhaps previous MINSA and CIPS under-reporting.

A major change instituted by CIPS and DGNIM in the commodity procurement system is that, where previously MINSA was required to pay in advance for purchase of commodities, currently credit is routinely extended by suppliers for up to 180 days at no interest. Commodities are often ordered via a simple Purchase Order signed by the Director General of CIPS. CIPS can now demand a performance bond of up to 15% from suppliers. This level of fiscal credibility is highly unusual for ministries of health in developing countries.

Currently CIPS is attempting to implement the MINSA policy of extending the decentralization process to the municipal level. This stretches their support resources including their vehicles, staff, gasoline, and travel per diem considerably. CIPS is experimenting with sending sealed packages to the SILAIS for forwarding to municipal health centers. This method is in response to a concern that when product is bulk shipped to the SILAIS, the major health centers and hospitals may be diverting products requisitioned by and destined for lower levels.

In addition, CIPS is considering experimenting with shifting from a one month requisition-delivery system to a two-month system. This would permit delivery at least to the municipal level in staggered months (eight SILAIS municipalities per month). This should result in the more efficient utilization of their support resources. CIPS will study this alternative with MSH to assure the two month system can meet emergency and seasonal needs adequately.

CIPS is introducing a new MSH designed system, the Sistema de Vigilancia de Insumos Criticos (SIVIC), for regular inventory use and control. SIVIC was introduced in SILAIS Occidental in late 1994 and is designed to determine critical shortages of products on a timely basis as often as weekly. It will be used to assess use-to-date at the health unit level, to identify both under-stocking and over-prescribing. MINSA

has formally requested that MSH continue its support for the development and implementation of SIVIC on numerous occasions.

SILAIS Level Management

The Evaluation Team visited one SILAIS warehouse. Record systems including requisitions, delivery invoices, the Kardex, and the delivery receipts of products to lower level centers were found to be in place and maintained to date. However, the warehouse structure itself as well as the warehouse equipment was found to be inadequate. There were only three metal storage stands in the warehouse. The floor, originally concrete, was fractured and wet and in areas dirt had replaced concrete. Cardboard boxes containing glass containers were on that part of the floor that was wet. No air conditioning was installed.

Under normal circumstances it takes about one month for pharmaceutical and medical supplies and equipment from the time they are requisitioned to the time they reach the end-user at the municipality level. Delays may occur due to adverse transportation and weather conditions. CIPS suspects that SILAIS level health centers and hospitals may take advantage of their proximity to SILAIS warehouses to increase their stocks. CIPS expressed the need for training of staff responsible for logistics functions at the SILAIS level and below.

Pharmaceutical and Medical Supplies and Equipment

The ASC study prepared by MSH and DGI consultants working with DGNIM and CIPS counterparts reviewed stock-out information on tracer products in SILAIS warehouses and health facilities over a 12 month period (March 1993 - April 1994). Table 1 summarizes general stock-out findings as reported in this study.

Table 1
Average Stock Outs by Category of Product and Site

Tracer Commodities	SILAIS Health Facilities	SILAIS Warehouses
Drugs	13%	13% - 29%
Family Planning Items	16%	20%
Medical and Diagnostic Supplies	28%	14%

To monitor the status of MINSA's pharmaceutical and medical supplies and equipment inventory, CIPS employed a methodology based on one developed by MSH working with DGNIM and CIPS. In 1994 and 1995 studies employing this methodology indicate that there has been a five percent decrease, from 75% to 70%, in the availability of trace medicines at the user level. The Evaluation Team conducted a test assessment of one SILAIS warehouse which showed only one drug stocked out.

A concern shared by MINSA, CIPS, and the SILAIS level is the cost and the visibility of this information of US-sourced products purchased by USPHS. These costs are frequently excessive, particularly for pharmaceuticals. They sometimes exceed by 200% the costs paid by CIPS for an equivalent product. Presently invoices shipped to SILAIS carry US unit cost prices in dollars which are converted to cordobas. USPHS commodities are registered in a separate Kardex (blue) while the CIPS procurement are in yellow. Both Kardex systems include product name, quantity, in and out information, date, and unit cost. Thus, when SILAIS management compares unit prices for the same items, cost differences between the two sources

(CIPS and USPHS) are readily apparent. This has caused concern within MINSA. It should be noted that the SILAIS are not charged the US sourced price.

A letter from the MINSA Minister to the Director of USAID/Nicaragua dated October 12, 1994 stated that MINSA could purchase certain drugs more cheaply than through USPHS. Alternately, USPHS could purchase certain US-sourced medical supplies and other equipment more cheaply than could MINSA. The need for a procurement plan was discussed jointly with MSH and MINSA. USAID has not reached closure on the issue of whether MINSA should procure pharmaceuticals or leave this to the DHS project.

The following potential problem areas were noted with regards to pharmaceutical and medical supplies and equipment:

- There are no infant weighing scales included. Scales are needed for the nutrition/growth monitoring in the DHS Project. Arm bands for growth monitoring by CHWs are not included and may also be needed.

- Approximately 500 TBA kits are ordered. TBA training for clean delivery, as part of the MH/CS Component, may result in the requirement to procure thousands more TBA kits through the DHS Project.

- Pap smear supplies and microscopes are not included. These may also be needed if cervical cancer screening is added to the MH/CS Component.

- If the treatment of sexually transmitted diseases is included in the MH/CS Component, this may require the procurement of gynecological and laboratory supplies through the DHS Project.

- Prenatal vitamins with iron are included; they are a high cost item. Iron for prenatal anemia is already included and is a lower cost item. The supply of iron ordered may need to be increased to meet the DHS Project target population needs.

USPHS will return in November 1995 to provide further assistance and review pharmaceuticals and medical supplies needs to align them more closely with DHS Project priorities.

The medical supplies and equipment budget for the DHS Project is $3,190,000. Total expenses under the PASA through 31 May, 1995 are $847,494, leaving a balance of $2,342,506. Accumulated obligations as of May 31, 1995 amount to $1,760,482. The spending rate appears to be consonant with project needs; however, interviews with the Director of CIPS indicated that they still experience about an average of 15% stock outs annually.

Family Planning Commodities

The data on family planning commodities demonstrates that the availability of family planning commodities has actually decreased since the MSH/DGI ASC study. CIPS inventory monitoring indicated that in 1994 only 56% and in 1995 only 55% of the health units sampled had family planning products. One SILAIS Director indicated that oral contraceptives were substituted based on product availability rather than on physical or medical criteria. Condoms were generally available, but copper T IUDs are in low supply. DepoProvera has only recently been introduced, and only in Jinotega. Response to DepoProvera is reportedly mixed and seems to depend on the gender of the health provider. Provision of contraceptive commodities is not a USPHS responsibility. There is a problem with assuring constant supply of

USAID/Nicaragua family planning commodities to rural clinics. UNFPA commodities are the most popular and are in shorter supply than those funded by USAID. Providers are said to be reluctant to promote family planning without an assured source of supply of products.

USPHS Management Performance of the Logistics and Commodities Sub-Component

The management of this sub-component through the application of short-term technical assistance is under the purview of the USPHS in conjunction with CIPS. USPHS has efficiently accounted for all the deliverables to date as specified in their SOW. This includes developing a list of approved supplies and equipment; accounting for all incoming products; and reporting regularly to USAID/Nicaragua on all requisitions and shipments.

B. Conclusions

1. The work performed by the USPHS/PASA and MSH has been of high quality.

2. The CIPS staff is knowledgeable, interested, and active in pursuing solutions to problems. They receive significant resources from the World Bank and DANIDA far greater than those available under the DHS project. Training of field level warehouse personnel needs to be developed. USPHS should provide assistance in developing and providing this training.

3. Stock-outs continue. However, the rate of stockouts in non-DHS Project-support SILAISs appears much greater than in DHS Project-supported SILAISs.

4. There is a high rate of family planning product stockouts. MINSA-UNFPA-USAID/Nicaragua discussions to resolve the lack of family planning commodity availability are needed.

5. CIPS is satisfied with USPHS procurement except with respect to the price of US-sourced products. US-sourced commodities are considerably higher in cost than CIPS-sourced equivalents. Alternative purchasing options should be explored.

6. The Evaluation Team was able to assess only one warehouse at the SILAIS level and found this facility unsatisfactory. MINSA is considering moving the warehousing function to below the SILAIS level. However, before this move is made, a survey of warehouse conditions is needed.

7. Over-prescription is perceived to be a problem by MINSA officials.

C. Recommendations

1. **USPHS Work with MINSA to Review Adequacy of DHS Project-Funded Supplies and Equipment**: USAID/Nicaragua should request that USPHS work with MINSA to review the DHS Project-funded supplies and equipment requirements necessary to adequately support the MH/CS Component in the five SILAISs through the life of the project. USPHS should prepare estimates of the supplies and equipment and the budget required for USAID/Nicaragua and MINSA review. This review should include a review of proposed "switching" of purchases by MINSA and USPHS. A procurement plan should be developed that plans for the purchasing and stocking of supplies and equipment so as to ensure that their availability is timely and sustainable.

2. **UNFPA Provision of Family Planning Commodities**: USAID/Nicaragua should coordinate with MINSA and the United Nations Family Planning Association (UNFPA) regarding shortages of family planning commodities.

3. **Repair of Warehouse Facilities**: A survey of warehouse conditions should be undertaken before supporting MINSA's desire to decentralize the warehouse function. USAID/Nicaragua should explore with MINSA and the World Bank the possibility of repairing and/or upgrading warehouse facilities down to the lowest level.

CHAPTER V: ALTERNATIVE SOURCES OF FINANCE COMPONENT

A. Findings

Background

Several studies have been undertaken that can serve as departure points for studies to be executed in the Alternative Sources of Finance Component (ASFC). They are:

- "Diagnostico Preliminar del Financiamiento y de los Sistemas de Administracion Financiera de los Servicios de Salud del MINSA", Vogel and Solorzano, July, 1994.
- "An Assessment of the Nicaraguan Ministry of Health's Compliance with the Finance-Related Conditions of its USAID PL-480 Title III Agreement", Fiedler, June, 1994.
- "La Utilizacion de los Costos Promedio de Mano de Obra para Medir la Eficiencia Relativa en los Centros de Salud de los SILAIS de Boaco y Managua Central", Manuel Olave and Janeth Vasquez, January, 1995.

In addition, the Inter-American Development Bank (IDB) has programmed approximately $1.39 million dollars US to support four studies that should provide significant basic information to support ASFC analysis. These studies are being implemented by MSH under direct contract with MINSA. The studies, that are either underway or planned, include:

- Health Sector Demand Study. 7,000 households are being surveyed. The preliminary report is due December 1995, and the final study is due mid-1996.
- Recurrent MINSA Costs Study
- Marketing Generic Drugs Study
- CIPS Reorganization Study

Progress to Date

By the terms of their contract with USAID/Nicaragua, MSH is responsible for undertaking four studies for this component. To date, one study has been completed "Estudio de la Farmacia Popular de Ocotal", Hicks, August, 1995. This study examines cross-subsidy financing of a MINSA pharmacy, the revenues from which are used by the corresponding Health Center as discretionary funds for under-budgeted line items, e.g. vehicle repair, gasoline, etc. The first AFSC study was submitted on time. A report due in March 1995 was submitted late and only in draft form.

MSH plans to undertake three other studies including "Dental Fees and Structure", "Differential Hospital Services Care", and "Demand Subsidies." In addition, a study is planned to analyze the use of funds generated by the Social Security System (INSS) to finance an HMO-type structure which contracts physicians and clinics to provide non-MH/CS services for which they are paid. Each of the studies are recommended because their findings may lead to understanding how "paid for" services can contribute to covering the costs of subsidized and free health services provided by MINSA.

Component Management by MSH

The Scope of Work for the COP position indicates that the COP should share his time equally between the two major tasks: 1) primary responsibility for oversight and coordination of all project activities and personnel, and 2) alternate sources of financing component. The COP indicates that he spends about 5-10% of his time on activities directly related to the ASFC and another 10-15% on indirect activities such as cost containment. There is no documentation, however, citing USAID/Nicaragua's agreement to decreasing the COP's level of effort for this component. A revised SOW of January 1995 specifies tasks for the COP but does not specify a percentage of time that he is to devote to the ASFC. Five of the 11 tasks listed are concerned with the AFSC. The COP states he intends to increase the amount of time he devotes to the ASFC next year.

When discussing progress, the COP made reference to the political environment. He expressed the idea that with elections being held next year, the present period is one of consolidation and implementation of policies approved earlier. New initiatives are essentially off-the-table until a new administration is seated. MINSA prior to the initiation of the DHS project, made significant advances in the development of financing alternatives, which now require time and effort to consolidate. MINSA gains in alternative financing are entering a period of high risk as the country faces elections.

B. Conclusions

The ASFC has made limited progress to date. Whether the rate of progress is acceptable given the constraints mentioned above is subject to discussion. Financing MH/CS services continues to be a high priority concern and problem of the GON. The planned studies should be executed as soon as reasonable in order to advance GON understanding of alternative financing options for health sector programs.

C. Recommendations

1. **Assessment of Studies to Be Executed in the ASFC**: USAID/Nicaragua in consultation with MINSA and Ministry of Finance (MOF) should reassess the validity of the studies currently programmed to be executed in the ASFC. Only studies that will contribute directly to addressing financing health sector priorities should be undertaken.

2. **Management of the Studies of the ASFC Component**: Consideration should be given to having the individual studies be managed by INCAE with a series of short-term study managers. However, management of this component should still remain with MSH.

3. **Lack of DHS Project-Funding for ASFC**: Should a determination be made that there is a shortage of funds in the project to continue this component, consideration should be given to identifying other donors that could undertake these studies.

CHAPTER VI: MANAGEMENT, FINANCE, AND DECENTRALIZATION COMPONENT

A. Findings

Background

The immediate objective of the Management, Finance Decentralization Component (MFDC) is the design and installation of information systems in general including financial management system (FMS) in MINSA that will support the GON longer term objectives of:

- strengthening financial management in the health sector; and
- decentralization of health service delivery in Nicaragua.

The systems are primarily for use at the SILAIS and health center levels.

This Management, Finance and Decentralization Component (MFDC) is being managed by the Development Group, Inc. (DGI), an MSH subcontractor jointly with MSH. DGI, with MINSA counterparts, has developed the specifications of the financial management systems (FMS) and has monitored the development and installation of the computer programs. MSH has provided more than half of the level of effort for the development of the FMS, responsible for the development and testing of the computer programs and development of user's manuals. MSH has provided most of the level of effort for other activities including the installation of computers, accessories and software, computer skills straining, development of user manual and development statistics manuals for MINSA.

The initial assessment of MINSA's financial management system (FMS) conducted during the ASC, concluded that MINSA's FMS needed strengthening particularly if decentralization objectives were to be realized. It was originally planned that DGI would design and install a FMS in five SILAISs. However, in February 1995 MINSA decided that the FMS should be installed in all of the SILAISs and at least one health center in each by the end of 1995. MINSA and USAID/Nicaragua agreed that only training that is critical to getting the FMS up and running in SILAISs throughout Nicaragua would be undertaken on a priority basis. All other training in financial management and administration including budgeting, accounting, and inventory control should be rescheduled as well as the development of a Health Information System to track progress in the health sector.

Progress to Date

All the elements of the **final design of the FMS** are fully described in "Sistema de Administracion y Financiera: Manual del Usuario", the manual prepared by MSH in June 1995 for MINSA. The FMS has at its core 15 standardized reports that are to be produced by the SILAISs. The actual system developed by MSH is written in Clipper in an attempt to recreate as much of the appearance of the previous system that was developed prior to the DHS Project[2] including the use of similar screen colors and menus. It is a fully menu-driven and transparent system, i.e., it requires no programming skills to operate successfully.

Specifications for an **accounting system** that would be but one dimension of the FMS were developed by an MSH employee and submitted in March 1995. The design of an electronic accounting component of the accounting system has been postponed until the FMS is installed and operating satisfactorily. In addition, the accounting system must be complementary with Ministry of Finance's (MOF)

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[2] The original work done to create a FMS for MINSA prior to the initiation of the DHS Project was written in FoxPro and not available to MINSA for modification.

accounting system. The architecture for the national system has not yet been developed. DGI is aware of this need and is vigilantly watching for any developments at MOF which will affect MINSA's FMS.

To date the **installation of the FMS** in the five initially targeted SILAISs has included the following: assessment of physical space of the SILAIS and reconditioning this space where appropriate; installation of air conditioning; purchasing of appropriate furniture; and the physical installation of equipment including computers have been installed in all DHS SILAIS. According to the DGI Advisor, the FMS will have been installed in all the SILAISs by the end of January 1996, assuming the World Bank is able to provide the planned consultants that will assist in the task of operationalizing the FMS.

Training activities that have been presented that are relevant to the operationalization of the FMS are:

- **#** Basic Computer Skills and Software Training: Training has been contracted to include DOS, Windows, WordPerfect and Quattro Pro.

- **#** An Orientation/Introduction to the FMS: This was conducted in coordination with the DHS Project Training Advisor who helped design the training format and provided facilitation support. A manual was also developed for distribution which covered all elements of the orientation. 112 prospective users in the FMS organized in three groups received this training.

- **#** On-the-Job Training in FMS: This has been conducted at each site and is based on an interactive learning approach which is under the supervision of a qualified specialist in the FMS. The training methodology is to spend two days working directly with the trainees in hands-on exercises; assignment of homework based on a standardized set of exercises to be completed by trainees without the trainer present; a review of the homework on return (usually 2-3 days later) of the trainer; and further work as necessary.

Collaboration with MINSA

DGI has maintained an excellent working relationship with the Administration and Finance Directorate which is responsible for control of budget and financial systems for MINSA. According to MINSA officials and MSH/DGI Advisors interviewed, this excellent level of collaboration has greatly facilitated the development and installation of the FMS.

Component Management by DGI and MSH

This component is being very well managed by the Financial Management Specialist from DGI. For example, a detailed workplan for the development and implementation of the FMS, prepared by DGI, is supplemented with Gantt Charts which identifies the tasks to be performed, the date by which a task is to be accomplished, and the person responsible to manage each task. Charts are modified as the situation demands. Justifications for workplan modifications are in writing. Informal verbal reporting to MINSA occurs frequently.

B. Conclusions

Progress towards the objectives of this component has been systematic and sustained. The products delivered to date meet the needs of MINSA as it pursues its financial management systems development and decentralization objectives.

C. Recommendations

1. **Other Donor Activities**: Activities concerned with the installation of the FMS being supplied by other donors should be monitored to ensure that no deficiencies occur.

CHAPTER VII: MANAGEMENT OF THE DHS PROJECT BY MSH

A. Findings

The Chief of Party's Management and Technical Responsibilities

The MSH approach to performing the paramount DHS Project management functions during Year One of DHS Project implementation was to make the Chief of Party (COP) accountable for all non-technical functions for each of the DHS Project components. This approach did not sufficiently take into account the time consuming nature of managing a myriad of tasks associated with the major long term components as well as the ASC. Additionally, the COP was assigned a technical role for the Alternative Sources of Financing Component. He also served as the Team Leader for the ASC, and during the implementation of the ASC, he assumed technical responsibility for undertaking the Donor Study. MSH identified in its proposal the large workload assigned the COP and notes that its suggestions for reducing this workload were not accepted. No team leader for the ASC component was budgeted for in the project design.

It appears that sufficient monitoring tools both in the form of the annual workplans, monitoring of data and monthly staff meetings are in place to ensure project implementation which is timely and produces results. If performance has not always met expectations on all sides it does not appear to be based on lack of experience nor on lack of systems. The issues appear to be those of multiple assignments to a key player on the team, the COP, and insufficient or ineffective communications among all the interested parties in project success: MSH, USAID/Nicaragua and MINSA. Whenever communications do not lead to clarification of roles, expectations or product quality requirements it can be assumed that some party is not understanding the other sufficiently. This was not the case across the project since some components met their objectives readily. Only certain components suffered from these communication differences. This leads the outside observer to conclude that what works some of the time could work all of the time.

Management of the ASC by the COP

The COP was to supervise and ultimately be responsible for the quality of technical inputs for the ASC studies, the progress in executing the ASC studies, and for finishing the studies as projected. As indicated in Chapter I, Accelerated Start Component, where the status of each study is discussed, the management of this component on the part of the COP, at best, can be regarded as selectively uneven. The Human Resources Assessment was not accepted and was dropped by mutual consent of MSH and USAID/Nicaragua.

Management the ASFC by the COP

The Project Paper indicates that the MSH COP should divide his/her time between the AFSC and general project management responsibilities. The COP indicates that he spends about 5-10% of his time on activities directly related to the ASFC and another 10-15% on indirect activities such as cost containment. There is no documentation, however, citing USAID/Nicaragua's agreement to decreasing the COP's level of effort for this component. A revised SOW of January 1995 specifies tasks for the COP and list 5 out of 11 that he is to devote to the ASFC. The COP states he intends to increase the amount of time he devotes to the ASFC next year. Clarifying expectations on the amount of time to be spent besides the weighting implied in the task list would seem to be a priority if it has not been done already.

Management of the MH/CS Component by MSH

The MH/CS Advisor supports five Nicaraguan Technical Assistants who are tasked with promoting MH/CS activities and training in five pilot SILAISs. If the measure of performance of the MH/CS Advisor

is to be reflected in the quality of activities being implemented in this component as outlined above, then the performance appears satisfactory.

Management of the Training Sub-component by the Training Advisor

The Training Adviser is doing a satisfactory job, although planning of the training process warrants improvement. The lack of a human resource data base for the health sector from which to develop an efficacious training plan impedes the DHS Project-funded training effort. The Training Advisor has compensated for this project gap by doing needs identification directly.

Management of the MFDC by DGI and MSH

This component is being very well managed by the Financial Management Specialist from DGI. For example, a detailed workplan for the FMS, prepared by DGI, is supplemented with Gantt Charts which identifies the tasks to be performed, the date by which a task is to be accomplished, and the person responsible to manage each task. Accomplishments appear satisfactory and well managed by DGI and MSH.

Short Term Technical Assistance

Short term TA for strengthening the capacity and performance of the MSH Team in the MH/CS Component has been provided in nutrition and continuing education for MH/CS. The Evaluation Team identified other potential areas such as IE&C, family planning, and safe delivery care where specialized technical assistance may be appropriate to supplement long-term advisors.

MSH Management Practices

As noted above, while sufficient monitoring instruments seem to be in place and used by MSH, whether these have always been effectively used by all parties to improve project performance when needed or to document successes appear to be in question. Oral communications within the MSH Team and with USAID/Nicaragua and MINSA appears to have been heavily relied on to track performance. Each component has detailed workplans for each year of operation. A monthly full day staff meeting is used by MSH to review workplan progress, discuss problems and seek solutions. Records of these meetings are maintained for review. Assuming good will on all sides, it is not clear why these systems have not lead to closer agreements among implementors and customers about what is being done and how it is being received. More frequent written communication might be indicated to assure understanding, record decisions and maintain a sound partner-based approach to implementation.

Management of the Logistics and Commodities Sub-Component by USPHS and MSH

The management of this sub-component through the application of USPHS short-term technical assistance has been the effective purview of the USPHS in conjunction with CIPS. USPHS has efficiently accounted for all the deliverables to date as specified in their SOW. Those deliverables under this component prepared by MSH have also been well received and are being utilized effectively.

B. Conclusions

While substantial progress has been made on the majority of the DHS project's components, the ones where results have been tardy or insufficient, in particular ASC and AFSC, appear to be linked to a complete overtasking of the COP. Whether it is realistic to expect an individual to shepherd this many interventions to successful completion is open to debate. While it is true that MSH accepted contractual responsibility for accomplishing all this, realism must enter somewhere. If there are too many things for one person to manage

the project has two options: 1) re-examine with the customers whether all the components are needed for project success and if not discard some, and 2) consider using short term technical assistance to supplement the COP's expertise and to reduce his management burden. Whether the person is qualified or not to handle a large number of interventions becomes a moot point if there is insufficient work time to accomplish it all.

Systems are in place to measure overall project progress through the annual reports and workplans. At least for the MH/CS component it appears that these plans could be improved by measuring the results of the projects outputs on service delivery changes in the SILAISs, not only on national or regional level changes in nutrition or health status and fertility. This measurement would make the linkage to specific project interventions clearer and allow for more informed component restructuring if necessary. This does not mean that what is in place is not acceptable, merely that it could be improved and thereby give the project a better data base from which to make decisions.

In some cases, notably immunization policy and the value and acceptability of key studies called for in the contract, communications can be dramatically improved. It is in the interest of all parties that this project proceed to meet the needs of the Nicaraguan health sector. Where the contractor and customers stand in basic disagreement on the path to pursue, the assistance of a neutral third party might be beneficial. Written communications should be sent to each party in a timely manner and all concerns should be answered expeditiously so that effective management can be maintained at all times.

C. Recommendations

1. **Contractor Management of the DHS Project and the MH/CS Component**: It is critical that the composition of the contractor team for the MH/CS Component be determined prior to assessments of MH/CS problems for each target SILAIS being undertaken and activities being identified and designed for each SILAIS. Overall project management has room for improvement as concluded in the previous discussion.

2. **Management of the Studies of the ASFC Component**: Consideration should be given to having the individual studies be managed by a series of short-term study managers.

3. **Use of Management Tools**: In order to systematically perform their management responsibilities, USAID/Nicaragua should request that MSH augment its management system in these ways:

    - **#** Upgrading of workplans to include objectives and indicators for improved service delivery in both SILAIS' and central Ministry for the kinds of interventions most directly affecting them.

    - **#** A periodic component status report for each component that has the following format:

        - -- Activities and accomplishments for the period reported on. (Where the activities have varied from the workplan in terms of the nature or timing of the activity, this should be noted in the report. It may be appropriate to update the workplan at this juncture depending on the nature and magnitude of the change);

        - -- Projected activities for the next reporting period;

        - -- Project implementation problems; and

        - -- Status of resolution of the problems identified in the previous reports.

- **#** Periodic and formal review meetings to improve DHS Project oversight to be conducted by the USAID Project Officer with the MSH Chief of Party. Consideration should be given to establishing a periodic review meeting to coincide with the review of the contractor's periodic component status report. MSH reports that such a meeting was held in July 1995 with good results. The workplan and the periodic report would be the basic instruments to be used in the review. The agenda for the meeting could follow the format of the periodic report.

CHAPTER VIII: DONOR COORDINATION

A. Findings

MINSA's Role in Donor Coordination

In 1994, to address donor cooperation issues, MINSA developed and implemented an MIS for tracking donor activities. This system is controlled by MINSA's Directorate for External Cooperation (DEC). The system tracks basic data for 21 projects. Trimester reports are issued that describe each project and include a technical description of each activity based on site visits. Also included in these reports is a section describing the major problems encountered during project implementation and actions taken to address the problems.

Three mechanisms exist in MINSA to coordinate donor activities which affect the DHS Project. A MINSA Steering Committee exists which is charged with advising on the use of DHS Project inputs and coordinating other MINSA activities with the DHS Project. While no clear written statement of the responsibilities of the MINSA Steering Committee was found by the Evaluation Team, the committee used to meet approximately quarterly to review and approve work plans and track project progress. The Steering committee was formally established and membership defined by an exchange of letters between the Minister of Health and the USAID Director. The Committee met twice in 1995. At a higher level within MINSA, an Interagency Committee exists that has a technical orientation. The focus of this committee is to exchange technical information; coordinate technical aspects of donor programs; and ensure that donor programs are harmonized with MINSA's significant programs and policies from a technical perspective. A Donor Group composed of high level officials of MINSA and donors meet annually and deal with broad areas of cooperation of donors and MINSA.

No one on the MSH Team is assigned the responsibility for following up on matters relating to donor coordination, including working to improve MINSA's donor tracking system. However, the COP's SOW in the Sixth Amendment, dated January 1995, directs him to work with the DEC as well as the Directors of SILAIS and Financial Management.

National SILAIS Commission

The DHS Project Agreement contains a Covenant that directs the GON to establish a National SILAIS Commission with a National Coordinator, and states that this Commission will meet on a regular basis.

B. Conclusions

There is a need for increased donor coordination. Emphasis should be on not only avoiding overlap, but increasing donor impact that would result from a more coordinated effort within the donor community working in the health sector. MINSA should remain the locus of donor coordination in the health sector.

The Evaluation Team questions the continuing need for the National SILAIS Commission given the existence of the three mechanisms in MINSA to coordinate donor activities.

C. Recommendation

1. **National SILAIS Commission in MINSA**: USAID/Nicaragua should consider dropping the Covenant in the Project Agreement to create a National SILAIS Commission with a National Coordinator, given the existence of three other mechanisms in MINSA designed to perform coordination functions.

CHAPTER IX: THE ROLES OF USAID/NICARAGUA AND MINSA IN THE DHS PROJECT

A. Findings

USAID/Nicaragua's Role

The DHS Project is a high priority activity for USAID/Nicaragua and a major feature of USAID/Nicaragua's health portfolio. At the time of the DHS Project start-up, the General Development Office (GDO) was responsible for monitoring the day to day work of the MSH contract. Subsequently, USAID/Nicaragua has undergone a reorganization, and there have been several personnel changes including the assignment of a new Health Officer who is presently monitoring the DHS Project.

USAID/Nicaragua has intensively monitored the activities of the contractor team from the start-up of the project to the present Evaluation. In July 1994, when MSH submitted the 1995 workplan, USAID/Nicaragua and MINSA were in close communication with MSH and pointed out the deficiencies in this initial workplan. These were communicated in meetings between MSH and USAID as well as in the steering committee meetings. Concerns were also communicated to the President of MSH on issues with the workplan by the GDO and the USAID Director in February 1995. Before this, the COTR provided feedback in writing to MSH in a letter in late 1994. USAID/Nicaragua's concerns regarding MSH performance pertaining to deliverables for the ASC also emerged early in the project implementation phase. The project documentation trail clearly demonstrates that there has been a sustained concern on the part of USAID/Nicaragua and MINSA regarding both the quality of the studies executed by the contractor and the lack of timeliness of their delivery in a few instances. The Human Resources Assessment and the Baseline Data and End of Project Status Indicators Assessment were reviewed and revised with considerable USAID/Nicaragua project monitor input.

From early 1994, USAID/Nicaragua's files are replete with communications within USAID/Nicaragua and from USAID/Nicaragua to the MSH Team addressing the problems that emerged as MSH attempted to define a rational implementation path concerned with orchestrating MH/CS activities in the five SILAISs. USAID/Nicaragua's project monitor for the DHS Project was directed by the Director of the GDO to undertake a comprehensive review of MSH performance near the end of 1994. A memo was sent to MSH dated December 19, 1994, identifying a number of areas of inadequate performance including delays in producing deliverables identified in the contract and an unsatisfactory level of performance in certain technical areas. Specific courses of action were recommended to be taken by MSH, and MSH was requested to respond promptly on a number of the points raised in the memo. Despite this formal request, numerous actions deemed critical by USAID/Nicaragua went unresolved. The COTR wrote another letter to the COP on March 16, 1995 requesting a formal response. No formal reply was received until May.

The DHS Project monitor's early departure and the appointment of a new project monitor took place in early 1995. The new project monitor provided detailed guidance to the MSH Team on deliverables, technical issues, project management, and reporting requirements. During this same period, the GDO requested that an evaluation be scheduled as soon as possible. MSH requested an evaluation in writing on May 5, 1995.

MINSA's Role

The Evaluation Team's assessment of MINSA's role included reviewing MINSA's contributions of staff time and commodities in support of the DHS Project, particularly the MH/CS Component. MINSA contributions have been substantial, sustained, and in accordance with the DHS Project Agreement. A sample of activities, illustrative of MINSA's support, is their work:

- developing an integrated model for MH/CS services to be applied throughout the SILAISs;
- promoting improved ARI treatments;
- reorganizing facilities to improve and integrate health care in the SILAISs;
- expanding MH/CS coverage to rural communities;
- improving the logistics system in terms of the procurement and distribution of supplies and equipment; and,
- moving aggressively to install the FMS throughout the health system although supplies are still needed.

Since January 1995, the Director General of Integrated Health Services for Women and Children has been the official counterpart for the MH/CS component.

Status of DHS Project Covenants

The Evaluation Team assessed progress with regards to addressing the DHS Project Covenants presented in the Project Agreement. Both MINSA and USAID/Nicaragua are responsible for monitoring actions necessary to satisfying the Covenants. These are summarized as follows:

1. The GON has to convene a National SILAIS Commission on a regular basis. The GON is to provide evidence that all major donors are made members, and the Commission is charged with coordinating efforts of donors to SILAIS system. MINSA is to appoint a SILAIS Coordinator.

   Action: A separate formal commission has not been established; however, regular meetings of the Interagency Committee take place performing the functions that had been intended for a National SILAIS Commission.

2. MINSA is to supply office space and equipment for the long term TA Team.

   Action: MINSA has supplied space and equipment.

3. The GON will increase the proportion of budget to 40 percent for primary health care as defined in 1992 general budget and maintain that level in real terms.

   Action: The GON has increased the proportion to more than 40 percent two years ahead of schedule.

4. The GON will participate in and provide logistical support to feasibility studies for new sources of revenue and enact, on a pilot basis, at least one of the recommendations of each study, or provide evidence why these recommendations should not be implemented.

   Action: To date, only one study has been completed "Estudio de la Farmacia Popular de Ocotal", Hicks, August, 1995 for which the GON has provided logistical support.

5. Do a functional analysis and establish job descriptions for all MCH positions and provide copy of this work to USAID/Nicaragua.

Action: MINSA has not yet carried these out. The Human Resource Assessment may have to be completed also before this can be satisfactorily addressed. TA may be needed to develop the analysis and job descriptions.

6. The GON will a put line item for each SILAIS in the GON's General Budget by CY 1994.

   Action: Each SILAIS has a budget and authority to make expenditures based on the budget.

7. A monitoring system will be established for the project.

   Action: An ongoing DHS Project monitoring function is done by the DHS Project Steering Committee.

8. The GON will provide reports on counterpart contributions at least annually or more frequently.
   Action: The GON provides reports on counterpart contributions quarterly to USAID/Nicaragua.
9. The GON will agree that USAID/Nicaragua may disperse funds under the grant for local currency costs for goods and for services required by the project.

   Action: The GON has agreed, and USAID/Nicaragua has dispersed funds.

10. The GON will provide the following information: 1) where pharmaceuticals are located, 2) the purposes why the pharmaceuticals are used, and 3) the officials responsible for the control of pharmaceuticals.

    Action: The GON has provided this information to USAID/Nicaragua. The information is satisfactory.

B. Conclusions

USAID/Nicaragua and MINSA have done a satisfactory job addressing their management responsibilities for the DHS Project. Since the inception of the project, there has been sustained concern about contractor performance, and this has been communicated informally and formally throughout the implementation process by both USAID/Nicaragua and MINSA. A review of the status of the GON resolving the DHS Project Covenants reinforces the perception that MINSA and USAID/Nicaragua are effectively addressing their project management and monitoring responsibilities.

USAID/Nicaragua has not been able to finalize a Monitoring and Evaluation Plan that clearly identifies the activities to be undertaken and the objectives, indicators, and the means of verification that are necessary to determine if the activities have actually resulted in progress.

C. Recommendations

1. **Development of a Monitoring and Evaluation Plan**: In order to systematically perform the monitoring function, USAID/Nicaragua should upgrade a monitoring and evaluation plan to contain the following elements:

- # the activities (inputs) to be financed by the DHS Project and a time frame for each of these activities.

- # the objectives, indicators, and the means of verification to determine if the activities have actually resulted in progress.

- # a periodic project status report for each contractor that has the following format:

  - -- Activities and accomplishments for the period reported on. (Where the activities have varied from the contractor's workplan in terms of the nature or timing of the activity, this should be noted in the report. It may be appropriate to update the contractor's workplan at this juncture depending on the nature and magnitude of the change);

  - -- Projected activities for the next reporting period;

  - -- Project implementation problems; and

  - -- Status of resolution of the problems identified in the previous report.

- # periodic and formal review meetings to improve DHS Project oversight. The Project Officer should consider a periodic review meeting to coincide with the review of the contractor's periodic project status report. The contractor's workplan and the periodic report would be the basic instruments to be used in the review.

ANNEX A

SCOPE OF WORK

ARTICLE I - TITLE

Evaluate the performance of the Mission, Contractors and Ministry of Health (MINSA) in the implementation of the Decentralized Health Services (DHS) project. Assess the relevance of the 1991 project design vis-à-vis the current needs of the Nicaraguan Ministry of Health and the recently revised Mission strategy.

ARTICLE II - OBJECTIVE

The objective of this activity is to assess the continued validity of the original project design, recommend any modifications in the design or mix of inputs and evaluate the implementation of the project to date.

ARTICLE III - STATEMENT OF WORK

The Contractor*s **responsibilities** include the following:

I.Prior to and during the evaluation, the team shall hold indepth discussions as required with the Contract Officer*s Technical Representative (COTR) and officers at USAID to review progress and permit continued monitoring of team activities to insure desired results.

II.The Contractor shall review project documents related to the purpose of the evaluation available in USAID and Management Sciences for Health (MSH) offices.

III.The Contractor shall make site visits accompanied by the COTR as required, to observe activities and interview appropriate MINSA personnel.

IV.The Contractor shall conduct interviews with the DHS contract team members, USAID/Nicaragua staff, MINSA Officials, and representatives from the Pan-American Health Organization (PAHO), United Nations Children Fund (UNICEF), Danish Agency for the International Development (DANIDA), German Technical Cooperation (GTZ), World Bank and Inter-American Development Bank (IDB).

The Contractor shall carry out the following tasks:

Assess the performance of the prime contractor, the U.S. Public Health Service, the Pan-American Health Organization (PAHO), the

United States Agency for International Development (USAID), and the Ministry of Health in meeting the objectives set out in the project paper and technical assistance contracts.

- To what extent were the objectives of the Accelerated Start Component met? To what extent did this component lay the groundwork for future actions and accelerate implementation. What was its contribution to establishing/measuring the Title III policy conditionality? Identify problems with the start-up and implementation of the ASC, including the appropriateness of having long term advisors work on this component. Were deliverables under this component appropriate, useful and delivered in a timely manner to facilitate project start-up?

- How have the major contractors (Management Sciences for Health, USPHS and PAHO) performed with regard to completing the tasks outlined in their scopes of work and delivering work products, with special emphasis on critical areas such as immunizations and other child survival interventions and management and financial decentralization? Is there an adequate system in place to track progress toward reaching project objectives and outputs as defined by the work plans, logical framework and Mission program performance indicators. Identify any deficiencies in the system and recommend improvements.

Assess the relevance of the contractor scopes of work, deliverables and work plans to achieving the outputs and purpose of the project.

- Do contract deliverables track with the Request for Proposal (RFP) and the objectives outlined in the Project Paper? Are linkages between the Ministry of Health, the prime contractor and the USPHS adequate to ensure that commodities meet the needs of the project at the central and local levels and are ordered and accounted for? Identify any gaps or weaknesses in commodity needs assessment, procurement planning and commodity tracking. Recommend priority action.

Assess the adequacy of coordination among the various donor project designs and target areas in the health sector and the adequacy of communication channels, committee structures, and informal mechanisms in identifying and solving technical or policy--related problems.

Examine the project designs and work plans of major donors with special attention to identifying overlap or gaps in functional areas and geographic targeting. As project implementation has progressed, have donors working in similar areas of endeavor duplicated resources such as technical assistance, training or provision of commodities? Recommend any modifications in mix of USAID-financed inputs in light of other donor activities

currently being implemented.

Assess the effectiveness of donor coordination mechanisms such as interagency coordination meetings, steering committees, and informal meetings in identifying and solving technical, managerial and policy issues. How well have the MINSA, USAID and other donors performed in fostering coordination and making maximum use of scarce donor resources? Recommend alternative mechanisms, either formal or informal, to improve donor coordination as warranted.

Evaluate the appropriateness of the project design vis-à-vis the changing environment in the health sector, the Ministry of Health*s current needs and the Mission*s revised strategic objective and related performance indicators. Pay particular attention to the coincidence between the project logical framework and the strategic objective and indicators on the one hand and the mix of inputs (technical assistance, training, commodities, local cost support) needed to achieve the desired results on the other. If the evaluation team recommends redesign of the project, the team shall draft a revised logical framework which will include a suggested set of outputs, required inputs to achieve these outputs, and an outline of revised project components.

Identify major shifts in policy or trends in the health sector which may call into question original underlying assumptions of the project design. For example, what progress has been made in decentralizing the health care system?

How relevant has this project been or will it be in fostering decentralization and linkages between local community organizations and volunteer structures and the formal health care system?

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management decentralization? Identify any gaps in donor support needed to implement these two major project thrusts. Finally, MINSA's decision to accelerate the pace of implementation of the integrated MCH model and the financial management systems, is sufficient time provided to test and

replicate interventions/methods in order to ensure quality and compatibility with existing systems/resources. What impact does accelerated implementation have on other project objectives and implementation plans? Based on evaluation conclusions in this regard, what further adjustments in project

implementation plans are needed? Recommend any adjustments in project design, components or mix of inputs which will make the project more responsive to the MINSA*s needs (especially in field implementation) and the Mission*s goals as stated in the strategic objective and performance

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IV. REPORTS

rs.

To carry out the work scope and to document the process, the Contractor shall provide the following documents and reports:

Four days after commencement of the field work on the contract, the team shall present a detailed plan for accomplishing the work and a schedule of interviews and site visits.

Conduct a mid-way briefing for GDO on progress and initial findings.

Submit a draft report in English 3 days prior to departure from Nicaragua. USAID will provide written comments within 5 days of receipt of the draft.

Conduct a final debriefing for USAID officials prior to the team*s departure.

Submit five copies of the final report, in English - incorporating responses to Missions comments, responding to questions posed in the statement of work and out-lining findings, conclusions and recommendations within 20 days after termination of the field work and receipt of USAID comments on the draft report.

The reports shall adhere to the following format:

Executive Summary. Not to exceed three pages, single spaced;

Statement of Conclusions and Recommendations. Conclusions should be short, succinct and prioritized with the topic identified by a short sub-heading related to the questions posed in the Statement of Work.

Recommendations should correspond to the conclusions. Whenever possible, the recommendations should be prioritized and specify who, or what entity should respond to the recommendations and in what time frame;

Body of Report. The report is to include a description of the context in which the evaluation was developed and carried out. Information (evidence and analysis) should be provided to support the basis for all conclusions and recommendations. The body of the report should be no more than thirty pages. More detailed analysis should be placed as an appendix.

The report should also include, if identified, a revised logical framework and suggested outline of project components.

Appendices.

These shall include, at the minimum, the following:

C The evaluation Scope of Work;

C A description of the methodology used in the evaluation (e.g., the research approach or design, the types of indicators used to measure change or the direction/trend of impacts, how external factors were treated in the analysis). Evaluator may offer methodological recommendations for future evaluations;

C Full analysis of any topic which, due to space limitation in the body of the report should be summarized; and

C A bibliography of documents consulted.

ARTICLE V - TECHNICAL DIRECTIONS

Technical directions during the performance of this Delivery order will be provided by the Health Development Officer at USAID/Nicaragua, who is also the Project Manager.

ARTICLE VI - TERMS OF PERFORMANCE

A. The effective date of this Delivery Order is the date of the last signature and the estimated completion date is 14 October 1995.

B. Subject to the ceiling price established in this Delivery Order and with prior written approval of the Project Manager (see Block No. 05 on the Cover Page), the Contractor is authorized to extend the completion date, provided that such extension does not cause the elapsed time for completion of the work, including the furnishing of all deliverables, to extend beyond 30 calendar days from the original estimated completion date. The Contractor shall attach a copy of the Project Manager*s approval for any extension of the term of this Delivery Order to the final voucher submitted for payment.

C. It is the Contractor*s responsibility to ensure that the Project Manager-approved adjustments to the original estimated completion date do not result in costs incurred which exceeds the ceiling price of this Delivery Order. Under no circumstances shall such adjustments authorize the Contractor to be paid any sum in excess of the Delivery Order.

D. Adjustments which will cause the elapsed time for completion of the work to exceed the original estimated completion date by more than 30 calendar days must be approved in advance by the Contracting Officer.

ARTICLE VII - WORK DAYS ORDERED

A.

Functional Labor	Work Days Ordered	Burdened Fixed Daily	Total
Evaluation Research	26	653	16,978
Evaluation Research	24	653	15,672
Evaluation Research	2	653	1,306

A. The individuals identified above are designated as essential/key personnel.

B. Subject to the ceiling price established in this Delivery Order and the prior written approval of the Project Manager, the Contractor is authorized to adjust the number of work days actually employed in the performance of the work by each position specified in this order. The Contractor shall attach a copy of the Project Manager*s approval to the final voucher submitted for payment.

C. It is the Contractor*s responsibility to ensure that the Project Manager-approved adjustments to the work days ordered for each functional labor specialist do not result in costs incurred which exceed the ceiling price of this Delivery Order. Under no circumstances shall such adjustments authorize the Contractor to be paid any sum in excess of the ceiling price.

ANNEX B

DOCUMENTS CONSULTED

United States Agency for International Development (USAID)/Nicaragua

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ANNEX C

PERSONS CONTACTED

United States Agency for International Development (USAID)/Washington

- Ellen Ogden, HPN Advisor, LAC/RSD/PHN

United States Public Health Service/Washington

- Dick S. Walling, Director of the Office for America and Middle East, Washington, D.C.

Pan American Health Organization/Washington

- Dr. Ciro de Caudros, Director Special Program For Vaccines and Immunizations

- Dr. Christina Nogueira, Regional Advisor, Special Program for Vaccines & Immunizations

Pan American Health Organization/Nicaragua

- Dr. Carlos Castillo

USAID/Nicaragua

- George Carner, Director

- Mark Silverman, Deputy Mission Director

- Dr. Karen Hilliard, Chief HIO

- Sheila Lutjens, Health Officer

- Paul Greenough, Evaluation Officer

- Richard Monteith, Population Officer

- Frank Valva, PVO Officer

- Michael Kenyon, Contract Officer

- Richard Layton, Controller

- Wendy Abrabmson, Monitoring of PL480

Management Sciences for Health/Nicaragua

- Peter Cross, Chief of Party

- Pilar Sebastian, Training Advisor

- Gustavo Corrales, Maternal Health and Child Survival Advisor

- Freddy Flores, Management Specialist

- Manuel Olave, Management and Financial Systems Advisor, Development Group International, Inc.

Ministry of Health, Government of Nicaragua

- Dr. Manuel Rodriguez R., National Coordinator
- Dr. Francisco Gutierrez, Technical Associate SILAIS Matagalpa
- Dr. Ivan Jarquin, Director SILAIS Jinotega
- Lic. Wilmert Reyes, General Coordinator of SILAIS Technical Committee MINSA
- Dr. Omar Malespin
- Dr. Fenerico Munoz, Minister of Health
- Arq. Ronald LaGrava, Consultant to OPS
- Dr. Carlos Javier Icaza Espinosa, SILAIS Boaco
- Dra. Dinorah Diaz, Director of Health Center in SILAIS Boaco
- Dra. Nereya Pasquier, Health Center in SILAIS Boaco
- Ing. Julio Norori, Director General of External Cooperation
- Lic Edgard Robleto, Director General of Administration and Finance
- Dra. Azucena Saballos, Director General of Atencion de Madre/Ninez
- Dr. Jorge Orochena, Director, Primer Nivel de Atencion
- Dr. Leonardo Contreras

- Lic. Claritza Morales, Educacion Permanente

- Lic Luis Amayo, Director, Desarrollo de la Communidad

- Dr. Gloria Elena Navas, Office of Nutrition

- Dra. Xiamara Telica, SILAIS Managua Officina Antigue SILAIS Oriental, Detras del Hospital Aleman/Nicarguense

- Dr. Mario Lacayo

- Lic. Isabel Turcios, Assessor

- Lic. Mireya Palmier

- Dr. Alvaro Guerra

- Dr. Joaquin Molina, Representative of OPS

- Dr. Freddy Contreras

- Lic. Mayela Quintanilla

- Dr. Roberto Lopez, Director SALAIS Managua

- Dr. Sergio Palacio

- Lic Rosario Hernandez

Swedish Assistance

-	Nils Ostrom	A.	A.	A.	A.	A.	B.	C.	D.	E.	F.G.H.I. A. A. A.